Missile Systems Technical Committee Meeting Agenda
AIAA Guidance, Navigation, and Control Conference

American Institute of Aeronautics and Astronautics

Time	Subject	Speaker
6:30	Reception/Dinner	
6:45	Welcome & Introductions	
6:50	New Member MSTC Overview	Jackie Murdock
7:00	Conference Reports	
	February 2004 StratTac Conference	Eleanor Aldrich
	2004 MDA Conference	Roger Medd
	2004 Missile Sciences Conference	Mike Lara
7:30	Subcommittee Reports	
	Student Design Competition	Bob Leginus
	Communications Including Highlights Issue	Mike McFarland
	MSTC Awards	Darren Hayashi
7:50	New Business	Jackie Murdock
	MSTC Vice-Chair Nominations	
8:00	Upcoming Meetings/ New Action Items	Jackie Murdock
8:10	Conference– Breakout Group Planning	All
8:50	Subcommittee – Breakout Group Planning	All
9:20	Summary of Group Discussions	All Subcommittee and Conference Sub-Chairs
9:40	Adjourn	All

American Institute of Aeronautics and Astronautics

Missile Systems Technical Committee (MSTC) Overview

August 11, 2003

Guidance, Navigation and Control Conference

Austin, TX

Committee Organization

American Institute of Aeronautics and Astronautics

- **32 regular members plus 3 associate members**
  - **Industry -- (Aerojet, Aerospace Corp, Atlantic Research Corp, ATK, Boeing, Lockheed Martin, Northrup Grumman, Raytheon, SAIC, Sparta, Sverdrup, Textron, Toyon)**
  - **Universities (Georgia Tech, Johns Hopkins)**
  - **Gov't Agencies (AMCOM, MDA, NASA Langley, NAWCWD, NSWC, Other)**
  - **13 new members added to roster in 2003**
  - **Ron Cottrell and James Lackey have rotated off MSTC**
- **Subcommittees and Conferences**
  - **Awards, Communications, Membership**
  - **Student Design Competition**
  - **TC Liaisons**
  - **Missile Sciences, Missile Defense Agency, Strategic and Tactical Missiles Conferences**
- **Meetings held 2-3 times a year**
  - **Strategic and Tactical Missiles Conference (Jan/Feb, even years)**
  - **Missile Sciences Conference (Nov/Dec, even years)**
  - **Missile Defense Agency Conference (March, every year)**
  - **Other as needed (GNC, Navy League, Joint Propulsion, Weapon System Effectiveness)**

American Institute of Aeronautics and Astr

MSTC Purpose

- **The purpose of the Missile Systems Technical Committee (MSTC) is to:**
  - Plan and execute technical meetings and conferences to provide the part of the AIAA membership interested in tactical and strategic missile systems and sounding rockets with an opportunity to keep informed about technical progress in these fields
  - Conduct special projects relating to national issues on the role of tactical and strategic missile systems, on national policy and national security for the evaluation of the AIAA membership and the public
  - Provide a forum where representatives of government and industry can jointly discuss problems of national interest in the missile and rocket fields
  - Provide a source of counsel on these system matters to the AIAA Publications Committee and to other TC's
  - To encourage engineering students to select careers in the missile aerospace community

Activities and Accomplishments 2002-2003

- **Membership more balanced across industry, government, and universities than in previous years; total membership increased to desired level**
- **Supported the following conferences**
  - **Missile Sciences**
  - **MDA**
  - **Strategic and Tactical Missiles**
- **Participated in TC training at ASM 03**
- **Participated in Congressional Visits Day**
- **Conducted Graduate Design Competition**
- **Published 2 page Missile Systems highlights article in Aerospace America**

Disappointments 2002-2003

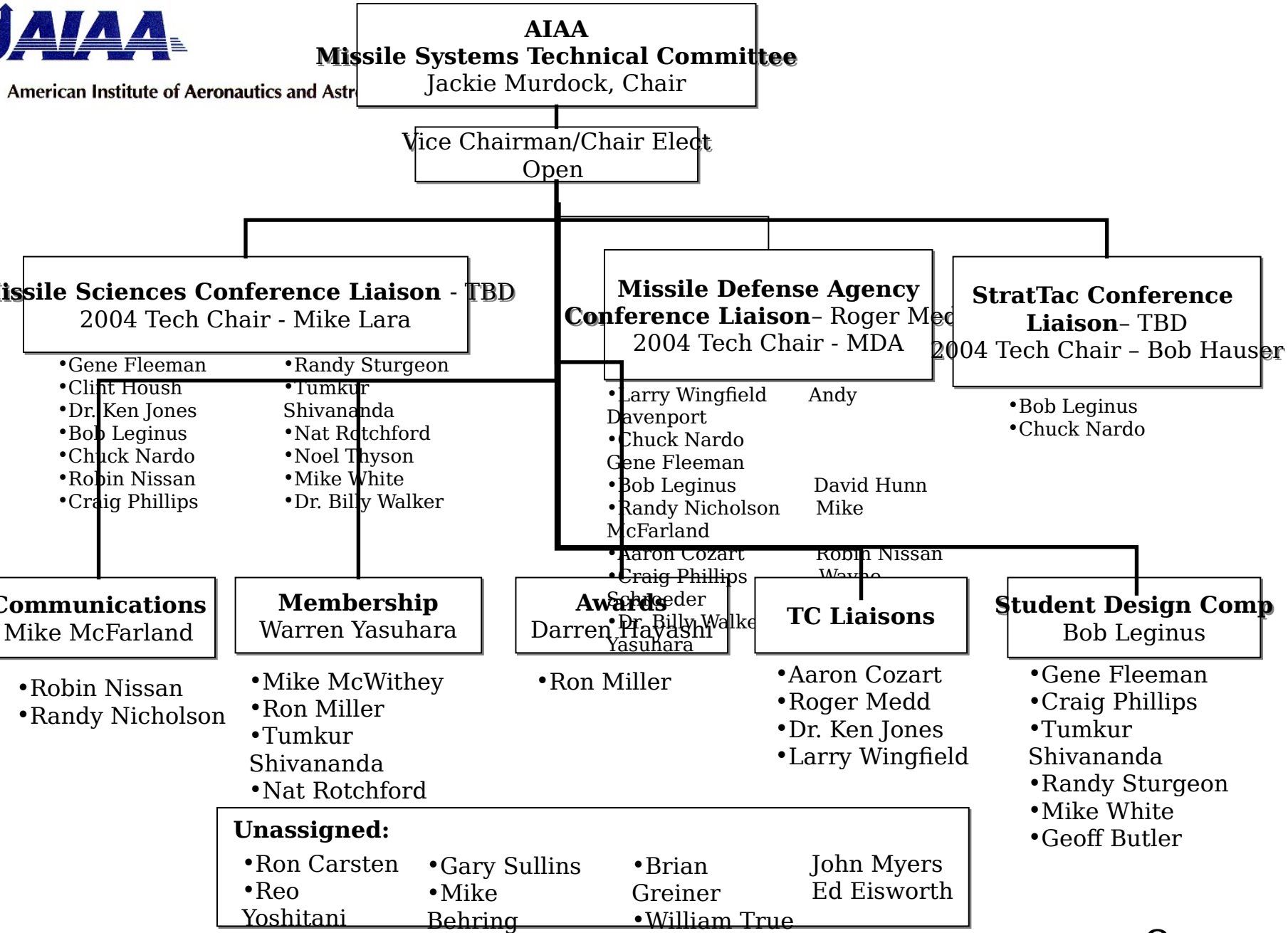
- **Need to increased membership from Universities and other Gov't agencies**
- **Failed to award MSTC Management or Technical Award**
- **Decreased role in Missile Sciences conference**
  - **Need for increased MSTC program planning identified**

AIAA
American Institute of Aeronautics and Astronautics

2003-2004 Plans/Focus

- **Continue to develop program plan for Missile Sciences conference over the next 3 years (2004 and 2006 conferences).**

- **Support and plan for Missile Sciences 2004**
- **Continue to support MDA 2004 and StratTac 2004**
- **Increase interaction and involvement with Universities in support of Student Design Competition. Continue to develop plan for increasing university participation over the next 3 years**
- **Increase proactive awards nomination and selection process**
- **Upgrade active members, seek new members and rotate off in-actives**
- **Increase representation from other government agencies, under-represented missile prime companies, and Universities**
- **Develop and increase website content and use by members**


AIAA
Missile Systems Technical Committee
Jackie Murdock, Chair
Vice Chairman/Chair Elect
Open
Missile Sciences Conference Liaison - TBD
2004 Tech Chair - Mike Lara
•Gene Fleeman
•Clint Housh
•Dr. Ken Jones
•Bob Leginus
•Chuck Nardo
•Robin Nissan
•Craig Phillips
•Randy Sturgeon
•Tumkur Shivananda
•Nat Rotchford
•Noel Thyson
•Mike White
•Dr. Billy Walker
Missile Defense Agency Conference Liaison– Roger Medd
2004 Tech Chair - MDA
•Larry Wingfield
Andy Davenport
•Chuck Nardo
Gene Fleeman
•Bob Leginus
David Hunn
•Randy Nicholson
Mike McFarland
•Aaron Cozart
Robin Nissan
•Craig Phillips
Wayne Schroeder
•Dr. Billy Walker
Yasuhara
StratTac Conference Liaison– TBD
2004 Tech Chair – Bob Hauser
•Bob Leginus
•Chuck Nardo
Communications
Mike McFarland
•Robin Nissan
•Randy Nicholson
Membership
Warren Yasuhara
•Mike McWithey
•Ron Miller
•Tumkur Shivananda
•Nat Rotchford
Awards
Darren Hayashi
•Ron Miller
TC Liaisons
•Aaron Cozart
•Roger Medd
•Dr. Ken Jones
•Larry Wingfield
Student Design Comp
Bob Leginus
•Gene Fleeman
•Craig Phillips
•Tumkur Shivananda
•Randy Sturgeon
•Mike White
•Geoff Butler
Unassigned:
•Ron Carsten
•Reo Yoshitani
•Gary Sullins
•Mike Behring
•Brian Greiner
•William True
John Myers
Ed Eisworth

Member Expectations

American Institute of Aeronautics and Astronautics

- Stay in communication
  - Attend appropriate subcommittees/working group meetings
  - Notify TC and subcommittee chair if you are unable to attend
  - Notify TC of changes in phone, email, member status, etc.
- Participate actively
  - 1 each subcommittee and conference/working group recommended
  - Be a major contributor/leader of at least 1 of these activities
- Provide annual support as:
  - Conference session chair
  - Reviewer for outstanding papers
  - Contribute to Highlights article
  - Reviewer for student design competition

American Institute of Aeronautics and Astronautics

MSTC Handbook

- This handbook will acquaint members of the American Institute of Aeronautics and Astronautics (AIAA) Missile Systems Technical Committee (MSTC) with the organization, objectives, and workings of the AIAA and the MSTC. The MSTC Handbook should also help to familiarize the technical aerospace community in general, and the AIAA membership in particular, with the MSTC and its functions. It should also stimulate interest in the committee's work and lead to improved communication with those who are primarily interested in the development and operation of strategic and tactical missile systems. This document provides organized support to the MSTC Chairman and members as well as enhance professionalism within the AIAA and the MSTC.

- Available on MSTC website
  - Through the AIAA website or directly at http://www.nawcwpns.navy.mil/mstc/aiaa.html

Conclusions

- Success relies on commitment of all members
- Always looking for new ideas

American Institute of Aeronautics and Astronautics

Action Item Review

Ref #	Action	Assignee	Date Due	Status
1	Each member to select 2 TC activities and notify J. Murdock of selections by 3/31/03. Recommend selection of 1 each, conference support (planning and/or vice-chair of session) and subcommittee support (committee chair, vice-chair, membership, awards, publications, TC Liaison, CVD, student design competition. Notify G. Butler and J. Murdock of selections.	All MSTC members	March 31, 2003	On-going
2	Propose MSTC help in reviewing abstracts for MDA conference. Investigate other support MDA may desire from MSTC.	R. Medd	August, 2003	
3	Distribute updated roster and meeting minutes to MSTC members.	J. Murdock	March 31, 2003	Completed
4	Recommend college professor for MSTC membership to aid in expansion of missile design competition participation.	All MSTC members	August, 2003	1 nom from G. Fleeman
5	Send out copy of 2002 Missile Sciences Conference program for review/revamping of conference program.	J. Murdock	March 31, 2003	complete
6	Provide suggested session topics for Missile Sciences conference.	All MSTC members	August 1, 2003	complete
7	Look in to using Data Centers (virtual data center) for conference classified paper distribution/publication.	R. Nicholson	August 1, 2003	In process
8	Add SPARTA to MSTC web site as additional sponsor for student design competition	M. McFarland/R. Nissan		Update sent to website coordinator

American Institute of Aeronautics and Astronautics

Conference Reports

American Institute of Aeronautics and Astronautics

Strategic and Tactical Missiles Systems Conference

Eleanor Aldrich
AIAA

American Institute of Aeronautics and Astronautics

2nd Annual Missile Defense Conference

Roger Medd
SAIC

American Institute of Aeronautics and Astronautics

2nd Annual Missile Defense Conference

General Conference Information
and
Abstract Review Plan

MSTC Meeting, 11 August 2003

Conference Objectives

1. Emphasize National Commitment to Missile Defense
2. Bring National Team together (industry and government)
3. Exchange information (All Technical Disciplines, Policy, Operations, Testing, System Engineering, Software Development, Logistics Support and Other Elements)
4. Provide Education (to and from delegates)
5. Improve inter-team communication
6. Recognize Superior Performance

Conference Team

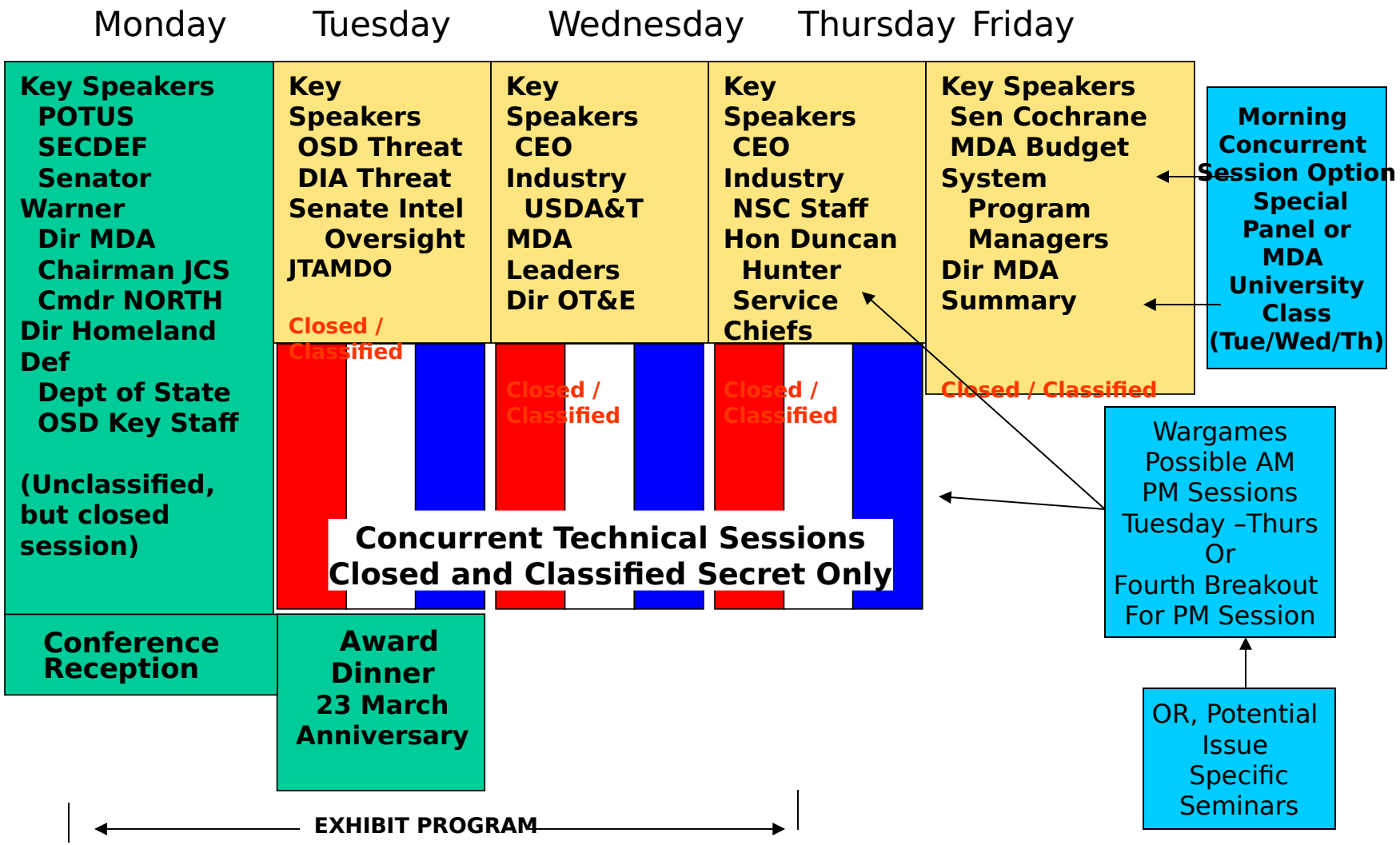
- AIAA Conference Sponsor (MSTC role?)
- Lockheed Martin Corporation Provides AIAA Corporate Support
- MDA Provides DoD Support to AIAA
  - MDA/PI Acts as DoD Conference Coordinator
    - Support Contractors (SAIC / Sparta / CSC)
  - MDA / SCI provides Conference Security (Information Protection)
  - MDA AV support
  - MDA EA and Protocol support for selected VIPs

Conference Key Information

- Conference Planned for week of 22-26 March 2004
- Conference Venue Selected: Ronald Reagan Center

- Conference Theme: "Ballistic Missile Defense System – Defeating all Ranges of Threats During All Phases of Flight"
  Daily Plenary Session Themes:
  - (Mon) Setting the Missile Defense Policy Environment
  - (Tue) Threat Assessment and Requirements Definition
  - (Wed) Integrating and Testing BMDS Blocks
  - (Thu) Fielding and Operating the BMDS
  - (Fri) Managing the BMDS
- Conference Attendance Expected to Approach 1000

otional Conference Program Pla



Call for Papers Topics

Programmatic

- Cost Estimation
- Investment Analysis
- Program Management
- Contracting
- Manufacturing & Producibility
- Quality Assurance
- Resource Management
- Initial Defense Operations
- Threat

Development & Demo

- Surveillance and C2BMC
- Weapon Technologies
- Targets and Countermeasures
- Lethality and Kill Assessment
- Discrimination
- Test & Evaluation/Ground/Flight Tests
- Other Technical Topics Related to Missile Defense

Threat & Systems

- Systems Engineering
- CONOPS and C2BMC
- Modeling and Simulation

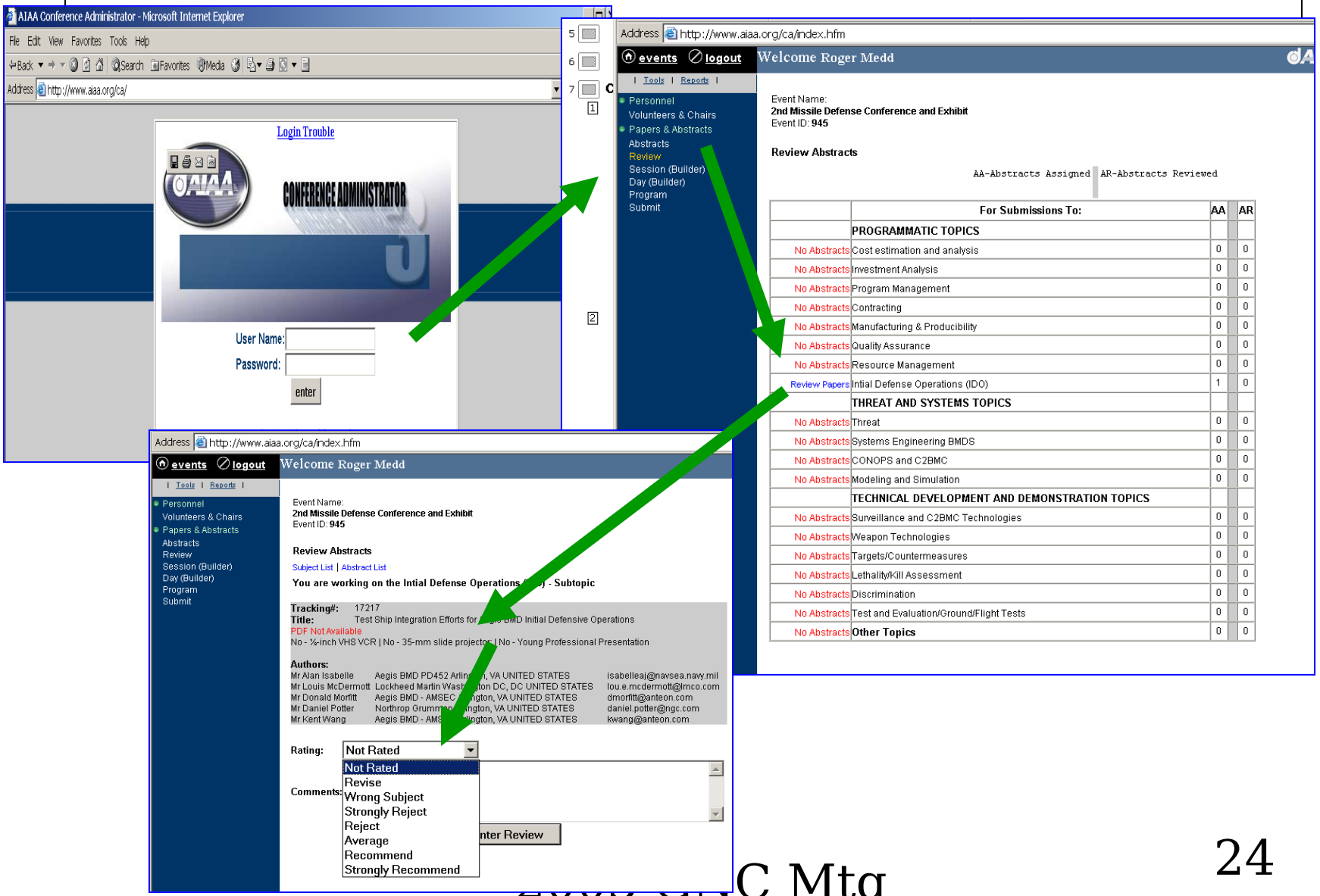
Program Definition Timeline

- Released Call for Papers in June
- Abstract deadline 5 Sep
- **Review and rank abstracts 8-26 Sep**
  - **Volunteers from both MSTC and Space Systems TC**
- Build sessions 29 Sep – 24 Oct
- Provide Preliminary Program input to AIAA 12 Oct
- Notify authors 30 Oct
- Confirm authors 11 Nov

Abstract Review Process

- Initial Teleconference and Website Training Session
  [last week of August]
- Independent abstract review and ranking
  [Consider the following in your assessment]
  - Relevance (is this the right venue?)
  - Importance (does this matter?)
  - Quality (how well does the author address the issues?)
- Enter scores in AIAA website, including comments and rationale, as appropriate
- MDA conference committee rack and stack
- MDA conference committee solicitation of invited papers to “fill holes”

AIAA Website Screenshots


AIAA Conference Administrator - Microsoft Internet Explorer
Login Trouble
CONFERENCE ADMINISTRATOR
User Name:
Password:
enter
Address http://www.aiaa.org/ca/index.hfm
events logout
Welcome Roger Medd
Tools | Reports
Personnel
Volunteers & Chairs
Papers & Abstracts
Abstracts
Review
Session (Builder)
Day (Builder)
Program
Submit
Event Name:
2nd Missile Defense Conference and Exhibit
Event ID: 945
Review Abstracts
AA-Abstracts Assigned | AR-Abstracts Reviewed
For Submissions To: | AA | AR
PROGRAMMATIC TOPICS
No Abstracts | Cost estimation and analysis | 0 | 0
No Abstracts | Investment Analysis | 0 | 0
No Abstracts | Program Management | 0 | 0
No Abstracts | Contracting | 0 | 0
No Abstracts | Manufacturing & Producibility | 0 | 0
No Abstracts | Quality Assurance | 0 | 0
No Abstracts | Resource Management | 0 | 0
Review Papers | Intial Defense Operations (IDO) | 1 | 0
THREAT AND SYSTEMS TOPICS
No Abstracts | Threat | 0 | 0
No Abstracts | Systems Engineering BMDS | 0 | 0
No Abstracts | CONOPS and C2BMC | 0 | 0
No Abstracts | Modeling and Simulation | 0 | 0
TECHNICAL DEVELOPMENT AND DEMONSTRATION TOPICS
No Abstracts | Surveillance and C2BMC Technologies | 0 | 0
No Abstracts | Weapon Technologies | 0 | 0
No Abstracts | Targets/Countermeasures | 0 | 0
No Abstracts | Lethality/Kill Assessment | 0 | 0
No Abstracts | Discrimination | 0 | 0
No Abstracts | Test and Evaluation/Ground/Flight Tests | 0 | 0
No Abstracts | Other Topics | 0 | 0
Subject List | Abstract List
Tracking#: 17217
Title: Test Ship Integration Efforts for
PDF Not Available
Authors:
Rating: Not Rated
Not Rated
Revise
Wrong Subject
Strongly Reject
Reject
Average
Recommend
Strongly Recommend
Comments:

MSTC/SSTC Review Panel

Karen	Barker	SSTC	Lockheed Martin
Lawrence	Cooper	SSTC	Kepler Research Inc
Dr. Aaron B.	Cozart	MSTC	The Aerospace Corp
Andy	Davenport	MSTC	Jacobs/Sverdrup AEDC Group
Doug	Eng	SSTC	JHU/Applied Physics Lab
Gene	Fleeman	MSTC	Georgia Institute of Technology
Gwynne	Gurevich	SSTC	Space Exploration Technologies
Dr. David	Hunn	MSTC	Lockheed Martin Missiles and Fire Control
Yusef	Johnson	SSTC	United Space Alliance
Dr. Yolanda	King	SSTC	AFRL - Spacecraft Technology Division
Dr. Michael	McFarland	MSTC	Raytheon Missile Systems
Dr. Chuck	Nardo	MSTC	Toyon Research Corp.
Robin	Nissan	MSTC	Naval Air Warfare Center
Craig	Phillips	MSTC	Naval Surface Warfare Center
Dr. Wayne	Schroeder	MSTC	Lockheed Martin Missiles and Fire Control
Dr. Billy	Walker	MSTC	US Army Aviation & Missile Command
Warren	Yasuhara	MSTC	Aerojet Corporation

Current Volunteer Count

Programmatic	Threat and Systems	Development and Demonstration
4	3	15

American Institute of Aeronautics and Astronautics

Subcommittee Reports

American Institute of Aeronautics and Astronautics

Student Design Competition

American Institute of Aeronautics and As

MSTC Meeting 11 August 2003 Graduate Design Competition

- **Missile Systems Technical Committee (MSTC) / Sverdrup / BAE Systems / SPARTA Sponsored**
  - Focus: Paper Design & Acquisition Program Development
  - Rewards: Real-Life System Level Project, Govt./Industry Program Reviews, Travel Funds, Tour, & JOBS
- **Recent Competitions (Prize)**
  - 1999: Environmentally Friendly Minuteman III Propulsion System Rocket Engine (MM III Dual Launch VAFB)
  - 2000: Advanced Long Range Cruise Missile (Raytheon Plant Tour)
  - 2001: Space Launch Peacekeeper ICBM Re-Design (Hill AFB, & Thiokol Propulsion Plant Tours)
  - 2002: Future Target Delivery System (FTDS) (Target Launch)
  - 2003: Proposed Long Range Liquid Target & Tactical Missile Designs
- **Contact Info: Bob Leginus, MDA/TCE (SPARTA, Inc.)**
  - bob_leginus@ rosslyn.sparta.com / 703.697.2187

MSTC Meeting 11 August 2003

Graduate Design Competition

- **2002/2003 Graduate Design Competition: Future Target Delivery System (FTDS)**
  - Land, Air, & Sea Launched Excess Military ICBM Class Target Missiles
- **Inquireries from West Coast AIAA Chapter & Foreign Graduate Student in England**
- **GA Tech Aerospace Design Lab, Atlanta, GA**
  - Kick-Off meeting 5 Dec 02; Mid-Term Review 27 Feb 2003
  - Final Review 1 May 2003, SPARTA, Huntsville, AL
  - Participants included MDA/TCE, MDA/TCL, MDA/TCD, TRW, SMC/Det-12, JHU/APL, Lockheed Martin
  - Final Report Scored by 8 Reviewers
    - Average score 93/100
    - Almost all rated as a First Place Candidate
- Recommend award First Place Award to GA Tech ASDL

MSTC Meeting 11 August 2003
2003/2004 Graduate Design Competition Recommendations

- **2 Design Competitions: Liquid Target & Boost-Phase Interceptor Missile**
- **Proposed Competition:**
  - **“Sole Source Award” to GA Tech ASDL**
  - **Invite 3 to 5 Professors/Grad Students from East Coast schools to participate in competitions**
  - **Pay travel expensed to 2 reviews each**
  - **Pay cost of Gene Fleeman Teaching GA Tech Design Competition Techniques to Professors/Grad students**
  - **Professors commit to competing in 2004/2005 Design Competition**
- **MSTC contacts Professors to Join MSTC & Participate**

American Institute of Aeronautics and Astronautics

AIAA MSTC
2003/2004 Graduate Students
Missile Design Competition Part 1

Long-Range Liquid Target Vehicle (LRLTV)

Bob Leginus, Sparta

- **Missile Systems Technical Committee**
- **2003/2004 Graduate Design Competition**
- **Part 1 - Long-Range Liquid Target Vehicle (LRLTV)**

- **Abstract:** The missile defense (MD) targets system program office (TSPO) needs to develop a new long-range liquid boost target vehicle to support testing of the boost and midcourse phase defensive capabilities of the different sub-system options being developed for an integrated ballistic missile defense system. The proposer will design and develop the new long-range liquid boost target vehicle to meet the high-fidelity replications and requirements of several “Missiles of Interest” (MI) in a single target missile or family of target missiles. A single target missile configuration that could be “tunable” to meet the varied MI replications is preferable. The signatures and characteristics of the MIs will be provided in the Technical Requirements Document (TRD).
- The primary goal of the Design Competition Study effort will focus on the design and development of a low-cost, highly producible, highly reliable liquid booster system that meets the MIs replication and the ballistic missile defense target office’s cost & schedule. The competition will contain 2 phases. Phase 1 will be a risk reduction phase to refine requirements for the LRLTV as specified in the initial TRD. Phase 2 will focus on design and development of the LRLTV. The scope of the study will include but not be limited to

Missile Systems Technical Committee
2003/2004 Graduate Design Competition
Part 1 Long-Range Liquid Target Vehicle (LRLTV) (cont)

- Phase 1: Risk Reduction
- Unclassified source literature search and draft catalogue of US and foreign liquid motors and launch vehicles. Draft catalogue will include the performance parameters identified in the TRD (provided by MD TSPO)
- Review and Refinement of the TRD requirements with MD TSPO (at kick-off meeting)
- Phase 2: Design & Development
- Identification of signature altering technologies uses to “tune” the LRLTV
- Identification of hit indicator systems/technologies for target kill assessment
- Identification of at least 3 preliminary designs which will achieve the functional requirements in the final TRD (mid-term review)
- Development of a final design which reduces risk and achieves goals and requirements in the refined TRD
- For the final design investigate mobile launch applications
- Development of
  - Test and analyses plans to verify design
  - Prototype and production plans
  - Aging surveillance plans
  - Maintenance and storage plans
  - Fuel handling plan
  - Launch procedures
  - Cost and Schedule
- Final review and report (with final catalogue as annex)

American Institute of Aeronautics and Astronautics

AIAA MSTC
2003/2004 Graduate Students
Missile Design Competition Part 2

Boost Phase Interceptor (BPI)
Design and Analysis Study

Eugene L. Fleeman

Georgia Institute of Technology

August 4, 2003

Need for a BPI System and System-of-Systems Design Study

- Need for a BPI System
  - Provide complementary capability to midcourse and terminal missile defense systems
  - Intercept threat missiles before they release their weapons and countermeasures
- Need for a System-of-Systems Design Study
  - Evaluate BPI alternatives
  - Evaluate launch platform alternatives (e.g., ground, ship, UCAV)
  - Evaluate threat warning/targeting alternatives

Objective

- **Design BPI with Capability Against Medium-to-Long Range Ballistic Missiles**
- **Provide Design Capability for**
  - **Intercept ballistic missiles from North Korea and Iran with ranges of 1,000 to 13,000 km and boost times of 2 to 4 minutes**
  - **Intercept in boost phase and ascent phase**
  - **Compatibility with ground, ship, and UCAV launch platforms of the year 2015**

Objective (cont)

- Consistent with Max Force Size Alternatives of
  - 20 launchers for a ground launched system
  - 4 ships for a ship launched system
  - 60 UCAVs for a UCAV launched system
- Minimum Missile Weight
- Unit Production Cost Less Than $1,000,000
- EMD Cost Less Than $500,000,000
- Hit-to-Kill

Tasks

1. **Alternative Baseline Concepts Definition**
2. **Alternative Baseline Concepts Evaluation**
3. **Recommended Concept Refinement**
4. **Performance Verification**
5. **Technology Roadmap**
6. **Documentation**

American Institute of Aeronautics and Astronautics

AIAA MSTC Involvement

- Attend Reviews
  - Kickoff Meeting
  - Midterm Review
  - Final Review
- Evaluate/Score Final Report and Select Winner
  - 100 page report
- Sponsor Field Trip for Winner
  - $5,000

American Institute of Aeronautics and Astronautics

Honors and Awards Subcommittee Report

11 August 2003

Darren K. Hayashi
Systems Engineer
Raytheon Missile Systems
dkhayashi@raytheon.com
(520) 794-5432

American Institute of Aeronautics and Astronautics

Award Committee Members

Darren K. Hayashi (Chair)
dkhayashi@raytheon.com

Warren Yasuhara
warren.yashara@aerojet.com

Selecting a Candidate

Throughout our careers, we have all had the pleasure of working with some pretty impressive technical and management talent.

It's time to recognize that talent and draw it to the attention of our community

Missile Systems Awards

The **Missile Systems Management Award** is presented for a significant accomplishment in the management of missile systems programs. The candidate must have demonstrated innovative leadership that has established an environment in which creativity in missile system technology can flourish and which led to the successful management of a major program by a government agency or an industry team.

The **Missile Systems Technical Award** is presented for significant accomplishment in developing or using technology that is required for missile systems. The candidate must have demonstrated expertise in aerodynamics, guidance, thermophysics, navigation, control, propulsion, or other fundamental technical discipline that has led to substantial improvement in missile systems

American Institute of Aeronautics and Astronautics

Previous Award Winners

Year	Award	Awardee
1997	Management	Dr. George Schneiter
1998	Technical	Charles Marino Jr.
1999	Management	Dr. William McCorkle
2000	Technical	George W. Sutton
2001	Management	No Award Presented
2002	Technical	No Award Presented
2003	Management	?

American Institute of Aeronautics and Astronautics

2003 MS Management Award Nominees

Howard M. McCauley
Naval Air Warfare Center Weapons Division, China Lake
Direct Attack Munition Affordable Seeker (DAMASK)

American Institute of Aeronautics and Astronautics

Awards Process

- Accepting Nominations for both 2003 Management Award and 2004 Technical Award
  - Nominations should include:
    - Rationale why candidate should receive award, candidate education, honors and professional assignments
    - Three to five statements supporting nomination, including at least one from a MSTC member.
- Nomination forms are available at the AIAA website or by emailing me (dkhayashi@raytheon.com)
- Nomination packages should be forwarded to:

  Carol Stewart, Honors & Awards Liaison (New)

  AIAA

  1801 Alexander Bell Drive #500:

  Reston VA 20191

  703-264-7623 fax: 703-264-7551

  e-mail: carols@aiaa.org

Awards Timetable

- **All 2003 Management Nominations to AIAA headquarters (September 2003)**
- **MSTC Awards Committee selects Award Recipient (October 2003)**
- **2003 Management Award Presented in 2004 (Feb 2004 Strat/Tact or Missile Sciences)**

American Institute of Aeronautics and Astronautics

TC Liaisons

Space Systems

Aaron Cozart

Space Systems TC Liaison Report - 11 Aug 2003
Activity Period: 1 May 2002 - 30 April 2003

American Institute of Aeronautics and Astronautics

- **TC Chair:** Dr. Yolanda Jones King -Technical Advisor
- AFRL/VSS
- 3550 Aberdeen SE
- Kirtland AFB, NM 87117-5776
- yolanda.king@kirtland.af.mil

- **Two Associate members & 1 foreign member**

- **Committee Meetings**
- Fall 2002: Virtual Meeting, November 25th
- Early Spring 2003: Albuquerque, NM, January 30-31, 2003
- Late Spring 2003: April, at Responsive Space meeting

- **Recent Activities**
- Responsive Spacecraft Conference - Los Angeles, 1-3 April 2003
- Tours: Ball Aerospace, Boulder, CO & USU SDL, Logan, UT

- **Near-term Events**
- Space 2003 Conference - Long Beach, 23-25 Sept 2003

American Institute of Aeronautics and Astronautics

Space Systems TC Liaison Report - 11 Aug 2003
Activity Period: 1 May 2002 - 30 April 2003

- **Awards**
- 2002 George M. Low Space Transportation Award (jointly given by both STTC & SSTC) - Mr. William J. D. Escher @ AIAA Joint Propulsion Conference, July 2002
- 2002 Space Systems Award (SSTC) - Deep Space One Team, Jet Propulsion Laboratory @ AIAA Responsive Space Conference, April 2003

- **Policy Steering Efforts**
- SSTC Space Policy sub-committee membership, AIAA White Paper - "Addressing the Comet and Asteroid Impact Threat: A Next Step."
- Warren Greczyn later participated in a Senate Space Roundtable "The Asteroid Threat: Identification and Mitigation Strategies"
- Testimony - The Commission on the Future of the United States Aerospace Industry.

- **Joint TC Activities**
- MSTC - 2004 MDA Conference Paper review
- o Reviewers: MSTC - Roger Medd, Aaron Cozart & SSTC - Yolanda King, Lawrence Cooper, Yusef Johnson and Gwynne Gurevich

- Space Transportation TC- George M. Low Space Transportation Award

American Institute of Aeronautics and Astronautics

New Business

- Vice-Chair Nominations

Vice-Chair Nominations

American Institute of Aeronautics and Astronautics

- Robin Nissan, Head, Chemistry & Materials Division, NAWCWD
  - MSTC member since 2001
  - Active on Communications subcommittee, Missile Sciences Conference support
- Warren Yasuhara, Program Manager, Aerojet
  - MSTC member since 1999
  - Active on Awards and Membership subcommittees
- Ron Miller, Program Manager, Northrup Grumman
  - MSTC member since 2000
  - Active on Awards and Membership subcommittees

Vice-Chair Nominations

American Institute of Aeronautics and Astronautics

- Additional nominations

- Email vote prior to StratTac Conference in February. Each MSTC member to send response prior to February meeting (send to Bob Leginus; cc J. Murdock).

Upcoming MSTC Meetings

American Institute of Aeronautics and Astronautics

- **There are 2 options for our next meeting. Selection will be voted on by email and are as follows:**
  - **Strategic and Tactical Missile Systems Conference**
    - **3 - 5 Feb 2004** Naval Postgraduate School/Hyatt Regency Monterey
  - **2nd Missile Defense Conference and Exhibit**
    - **22 - 26 Mar 2004, Washington, DC**
- **2004 Missile Sciences Conference**
  - **15-18 Nov 2004** Naval Postgraduate School/Hyatt Regency Monterey

American Institute of Aeronautics and Astronautics

2004 Missile Sciences Conference
MSTC Planning Session

2004 Missile Sciences Conference

American Institute of Aeronautics and Astronautics

- Sponsor – Alliant Tech Systems Missile Systems Company
- Technical Chair – Mike Lara
- General Chair – TBD/Brian Lawrence, VP Bus Dev
- Location - Naval Postgraduate School in Monterey, CA
- Date – 15-18 November
- Program notes:
  - Planning has begun
  - Sessions are being re-evaluated

2004 Missile Sciences Conference

American Institute of Aeronautics and Astronautics

- **Previous Year 2002 Program Format**
  - Plenary session plus 15 other sessions
  - Plenary included address by Chair; 3 invited speakers
    - Keynote: Dr. Dibiaso/Office of DUSD, Missile Defense Policy
    - Threat Brief: Tom Flamminco/Advanced Conventional Weapons Division,DIA
    - Transformation: Diane Wright, Air Warfare Office of Under Secretary of Defense, Acquisition, Technology and Logistics

  - **2002 sessions topics**:

	Co-Chair	Chair
• Air Force Tactical Missiles (1)	L Lawson/LMMFC-D	S. Korn/Eglin
• Army Tactical Missiles (1)	R. Abbott/LMMFC-D	Bill McCorkle/AMCOM
• Navy Tactical Missiles (2)	Dr. Bill Carpenter/RMS	S. O'Neill/NAVSYS
• Air Force Strategic Missiles (2)	R. Leginus/SPARTA	R. Fisher/USAF
• Navy Strategic Missiles (2)	Dr. B. J. Richter/LMM&S	D. Elliot/US Navy
• Mission Planning (1)	Andres Dan/JHUAPL	M. Hecker/US Navy
• Missile Defense (1)	M. Trotsky/LMMFC-D	J. Cosumano
• Automatic Target Recognition (1)	Gene Fleeman/Georgia Tech	E. Reedy/Georgia Tech
• Cruise Missile Defense (1)	Gordon Niva/Boeing	C. Lambert
• Innovative Technologies (2)	Mike White/JHUAPL	G. Graff/ONR
• Weapon System Effectiveness (1)	James Atwater/XONTECH	J. O'Bryon/SecDef Office

2004 Missile Sciences Conference

American Institute of Aeronautics and Astronautics

- **2004 Program Format Discussion**
  - Plenary session plus 15 other sessions
  - Plenary session
    - Chair address
    - Keynote speaker
    - **Potential** plenary session topics
      - Weapons Roadmap invited speakers (Army, Air Force, Navy – 1 each)
      - Threat Briefing
      - Future Missile Programs (DARPA/ONR)

– **2004 session topic repeats:**	Co-Chair	Confirmed
• Air Force Tactical Missiles (1)	Mike McFarland	yes
• Army Tactical Missiles (1)	Mike Gagne/ARC	yes
• **Navy Tactical Missiles (1)**	**Bill Carpenter/RMS**	**yes**
• **Air Force Strategic Missiles (1)**	**T. Shivananda/Northrup Grumman**	**yes**
• Navy Strategic Missiles (1)	Dr. B. J. Richter/LMM&S	yes
• Mission Planning (1)	Andres Dan/JHUAPL	yes
• **Missile Defense (1)**	**C. Nardo/Toyon**	yes
• Cruise Missile Defense (1)	Gordon Niva&David White/Boeing	yes
• **Innovative Technologies (1)**	**Mike White/JHUAPL**	yes
• Weapon System Effectiveness (1)	James Atwater/XONTECH	yes

Bold font denotes MSTC member

2004 Missile Sciences Conference

American Institute of Aeronautics and Astronautics

- 4-5 new sessions are needed
- Potential new 2004 session topics:

	Co-Chair
– Targets & Countermeasures	Bob Leginus, SPARTA
– Counterproliferation	Roger Medd/SAIC
– Transformational Missile Systems	Craig Phillips/NSWC
– Attack Weapons/Joint Weapon systems	Clint Housh/NAWCWD

American Institute of Aeronautics and Astronautics

MISSILE DEFENSE TARGETS & COUNTERMEASURES SESSION – PROPOSED, Bob Leginus

- Technical papers are solicited for a session addressing missile targets and countermeasures required to support elements of the Ballistic Missile Defense System. Technical papers should address design, prototyping, development, product improvement, and testing of targets & countermeasures that provide threat realistic challenges to the evolving layered missile defense system. Papers of interest include, but are not limited to:
  - Reentry Vehicles
  - Short, medium, & long range solid & liquid missile delivery vehicles
  - Liquid missile systems with tunable plum signatures
  - Counter-measure and counter-countermeasure-measures presentation
  - techniques and objects
  - Decoys & replicas
  - IR & Radar signature presentation techniques
  - Onboard and fly away sensor packages
  - Target models & simulations
  - Mobile land, air, & sea launch concepts & platforms
  - Range safety and telemetry advances

Decided to Include

Transformational Missile Systems Session – Proposed, Craig Phillips

- Transformational Missile Systems
  - DARPA/ONR Programs
  - Missile Materials Technology Advancements
  - Government Sponsored Initiatives
  - New Missions

Decided to Include – also consider including System Issues topics:
-Big picture
-Thread
-Excess missiles for other applications
-MDA future, Darpa future

Counterproliferation Session – Proposed, Roger Medd

- Counterproliferation -
  - Targets and solutions
  - Relevant R&D and systems in development

Include - session content to be further defined

Attack Weapons Session – Proposed, Clint Housh

- Attack Weapons
  - Current and future systems
  - Next generation weapons
  - Loitering, Glide, short/long range Cruise Missiles

Include - combine with Joint Weapon Systems session

Modeling and Simulation Session – Proposed, TBD

- Modeling and Simulation
  - Visualization
  - .
  - .

Eliminated - should be included in individual sessions

Joint Tactical Missiles Session– Proposed, TBD

American Institute of Aeronautics and Astronautics

- Joint Tactical Missiles
  - .
  - .
  - .

Combined with Joint Weapon Systems session

System Level Issues Session – Proposed, TBD

- System Level Issues
  - Big picture
  - Threat
  - Excess missiles for other applications
  - MDA future, Darpa future

Eliminated as individual session - include topics in Transformation Missile Systems session

Innovative Technologies – PROPOSED, Mike White

American Institute of Aeronautics and Astronautics

- Papers are solicited on innovative technologies and systems concepts for

  advanced missiles and unmanned air vehicles. Innovative missile technologies and concepts relevant to missiles for tactical and strategic strike, air and missile defense, and air superiority applications are of interest. We are seeking papers on novel technologies in the areas of guidance, navigation and control, affordability, drag reduction, advanced airbreathing or rocket propulsion, advanced materials, advanced seekers, modeling and simulation, improved accuracy in a GPS jamming environment, and innovative design and application of UAV or UCAV capabilities including cooperative autonomy.

Include

Applications of Best Practices for Missile Systems and Subsystems Session – Proposed, Mike Allen

American Institute of Aeronautics and Astronautics

- The focus on continuous improvement to reduce waste, process variation and cost has influenced all industries including Automotive, Healthcare and Aerospace to name a few. Papers are solicited on the application of process improvement best practices as applied to all components of missile design, manufacturing and system integration.

Subjects of particular interest include, but are not limited to:

- Lean manufacturing best practices applied to missile integration, subsystem assemblies, and component fabrication including modular cell design, simultaneous engineering and Value Stream Mapping.
- Six Sigma applications for reduction in process variation and waste associated with missile system, subsystems and component manufacturing that follow the MAIC process
- Application of Design for Six Sigma initiatives applied to missile design including QFD, DFMEA, DFMA, Statistical Tolerance Analysis, RSM, Monte Carlo Analysis and Robust Design techniques (Taguchi or Split Plot Analysis)
- Development of innovated manufacturing technology that demonstrates best practice tool use from Lean Manufacturing, Six Sigma and DFSS.

Eliminated - potential lack of papers

Plenary Session/Theme Discussion

American Institute of Aeronautics and Astronautics

- Plenary session
  - Chair address
  - Keynote speaker
  - Potential plenary session topics
    - Weapons Roadmap invited speakers (Army, Air Force, Navy – 1 each)
    - Threat Briefing
    - Future Missile Programs (DARPA/ONR)
- Theme

Decision for Plenary Session - Keynote speaker followed by "Lessons Learned in Iraq" invited speaker session. "Weapons Roadmap' discussion can occur at the start of each session by session ch

Previous Milestones and Deadline Dates

American Institute of Aeronautics and Astronautics

- **Call for Papers due to the Bulletin Editor 14 September 2001**
- **Issue of *AIAA Bulletin in Aerospace America* in which the Call will appear November 2001**
- **Stand Alone Call for Papers mailed and posted to web November 2001**
- **Abstract/Manuscript due to Conference Committee for review and selection 3 March 2002**
- **Completed conference program to Event Specialist 1 May 2002**
- **Notification of acceptance and author instructions to selected authors by AIAA 15 May 2002**
- **Issue of *AIAA Bulletin in Aerospace America* in which conference preliminary program will appear August 2002**
- **Preliminary Program direct mail piece distributed August 2002**
- **All additional corrections/changes to conference program due to Event Specialist for Final Program 13 September 2002**
- **Date of conference 5-7 November 2002**

2006 Missile Sciences Conference

American Institute of Aeronautics and Astronautics

- Sponsor is TBD – MSTC needs to identify
- Technical Chair – TBD
- Program notes:
  - Planning needs to begin now (3 year planning cycle)
  - Plenary to be re-evaluated
  - Sessions are to be re-evaluated
  - Consider inclusion of workshops, lecture series, etc
  - Length of conference can be extended